AN OVERVIEW OF IWT

ITS TEAM, TECHNOLOGIES AND THE CARSON, CA PROJECT

September 2015

Carson Renewable Energy Project

- Interstate Waste Technologies (IWT) specializes in municipal solid waste (MSW) recycling using Thermoselect high temperature gasification technology
- The Thermoselect technology achieves 100% recycling of MSW, produces no ash, has no process water discharge and generates minimal air emissions
- MSW is processed into synthesis gas which is then used in LanzaTech technology to produce ethanol
- Shell purchases the ethanol for use and distribution via its Carson, CA facility and other sites

Strategic Partner
Los Angeles County

- The Los Angeles County Department of Public Works:
  - Selected IWT as the highest rated Conversion Technology project developer to process MSW
  - Is working with IWT to develop a Letter of Intent to supply waste to the project, which may create a template for MSW contracts for use by cities throughout the County
  - Will actively assist in the project's public outreach and permitting process
  - Has been informed of the selection of the Carson site and is supportive of its use

IWT PROJECT TEAM

- Sinerga SA (a Swiss company)
  - Licenses its patented Thermoselect gasification technology
- LanzaTech
  - Licenses their patented ethanol manufacturing technology
- SNC Lavalin
  - EPC Contractor (for LA and Mass projects)
  - Major engineering and construction company
  - Has designed and built hundreds of industrial facilities including gasification and alternative fuels projects worldwide
  - Has 15,000 employees; 2013 revenues - $8 billion
  - Will provide bonding as required
- RTP Environmental
  - Permitting Engineer
  - Significant experience permitting facilities

IWT PROJECT TEAM

- NAES, Inc.
  - Operates and maintains facilities
  - Will provide bonding as required
  - Currently operates 136 industrial facilities
  - 2013 revenues - $400 million
  - Subsidiary of Itochu International
- RLR Consultants
  - Financial Advisor
  - Arranges debt and equity participation
- Alliant Insurance Co.
  - Provides construction, performance and operation & maintenance insurances
- IWT
  - Develop, finance and own facilities
  - Single point of responsibility
  - Has significant experience in project development

INDEPENDENT THIRD PARTY EVALUATION OF IWT & TECHNOLOGY

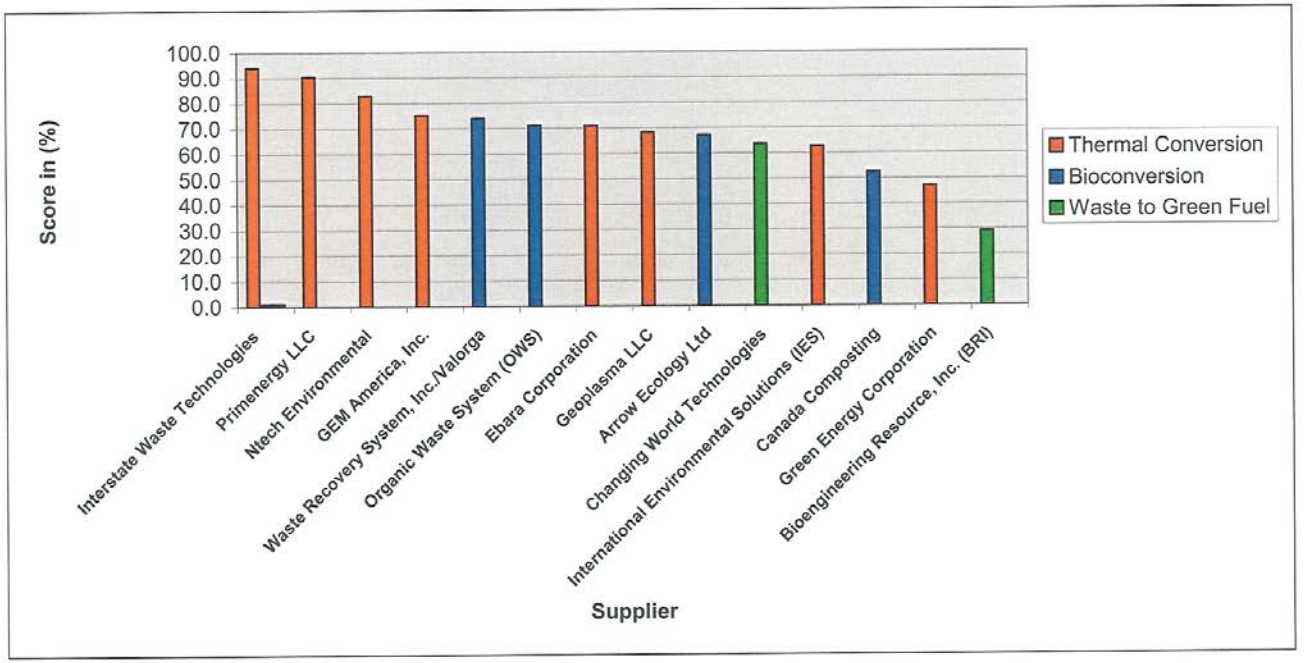
- The County of Los Angeles sponsored a comprehensive study to evaluate commercially available non-incineration waste processing technologies beginning in 2004

- URS, our nation's largest engineering firm conducted the study. The County and URS concluded the following:
  - Based on supplier credibility, existing operational experience, completeness of engineering, landfill diversion, permitability and economics, IWT and the Thermoselect technology were ranked #1

- The entire report is available on IWT's website at iwtonline.com

- The ranking of the top 14 study participants is included at page 6

FIGURE 2-1
SCORES OF CONVERSION TECHNOLOGY BY SUPPLIERS



INDEPENDENT THIRD PARTY EVALUATION OF IWT & TECHNOLOGY

- The New York City Economic Development Corporation and the Department of Sanitation evaluated non incineration waste conversion technologies beginning in 2003

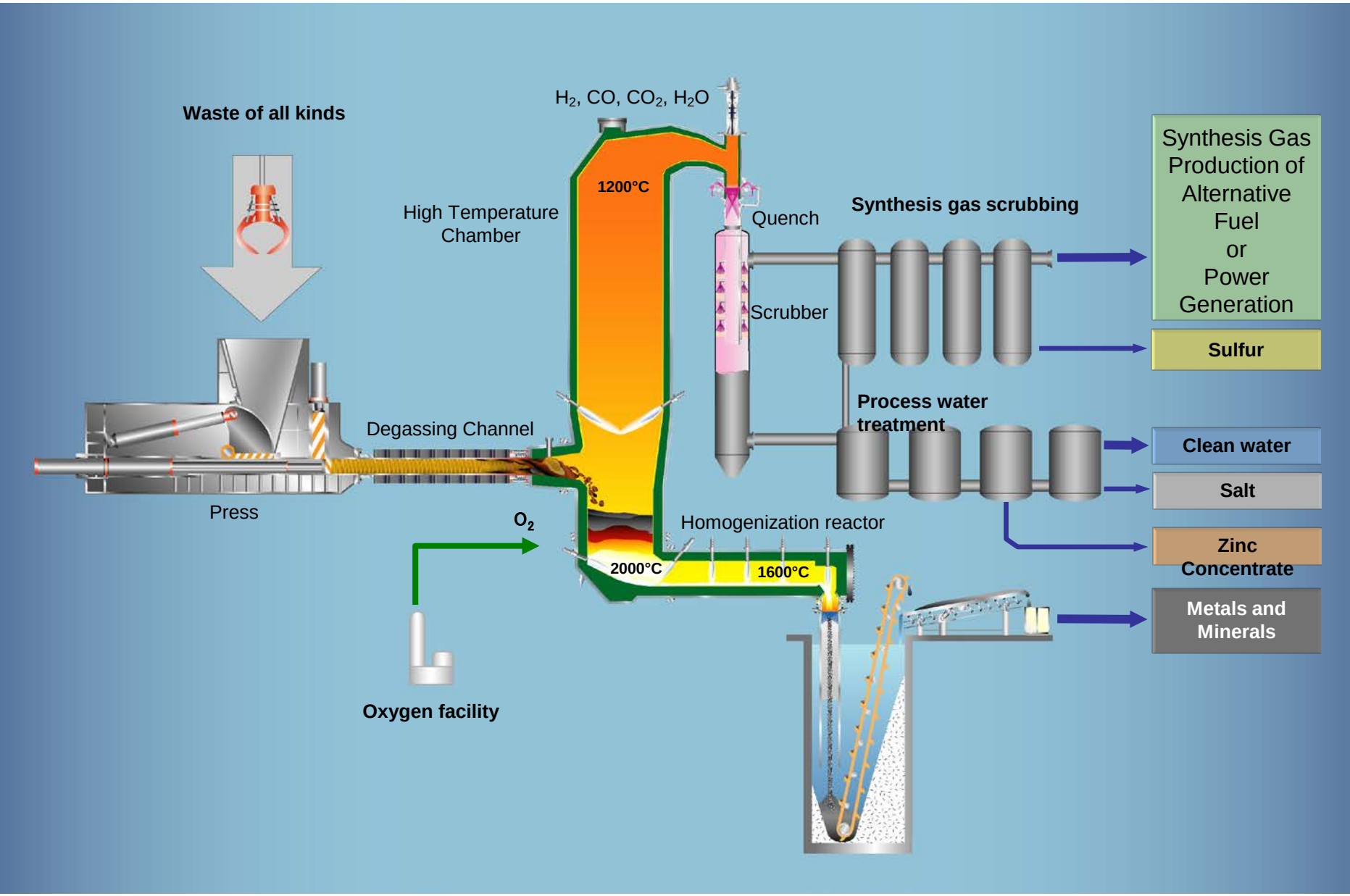
- The City's consultant, ARI, concluded the following:
  - Based on technology readiness, reliability, facility design, environmental performance, beneficial use of waste, marketability of recycled products and experience and resources of the project sponsor, IWT and the Thermoselect technology were judged superior
  - The entire evaluation is available on IWT's website

PROVEN TECHNOLOGIES AT COMMERCIAL SCALE

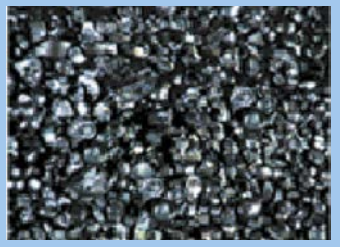
- Technology Application
  - Convert waste into synthesis gas and then to ethanol
- Sinerga (Thermoselect) Gasification
  - 23 years of operating experience
  - Processed over 8 million tons of waste
  - 7 plants operating in Japan processing MSW
  - Has announced a 9,500 tpd MSW facility in Antwerp that will produce urea
- LanzaTech
  - Proven technology
  - Operating in three facilities

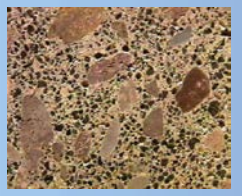
SINERGA TECHNOLOGY

- An industrial process using high temperature (non-incineration) gasification technology
- 43 patented processes - over 300 patent awards worldwide
- Produces energy rich synthesis gas from the energy in the waste which is used to
  - Generate electricity, or to
  - Manufacture alternative fuels – ethanol, methanol, gasoline
- Diverts 100% of the waste it processes into commercially useful products
  - No ash is produced; no landfill is required


Waste of all kinds
H_2, CO, CO_2, H_2O
1200°C
High Temperature Chamber
Quench
Synthesis gas scrubbing
Scrubber
Synthesis Gas Production of Alternative Fuel or Power Generation
Sulfur
Process water treatment
Clean water
Salt
Degassing Channel
Press
O_2
Homogenization reactor
2000°C
1600°C
Zinc Concentrate
Metals and Minerals
Oxygen facility

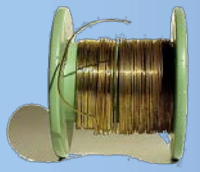
Vitreous Mineral Granulate





Concrete
Road Construction
Sand-Blasting

Iron-Copper Alloy



Metallurgy

Salt

Chemical Industry, Additive for Metallurgy

Sulfur

Chemical Industry,
Sulfuric Acid Production

Zinc-Concentrate

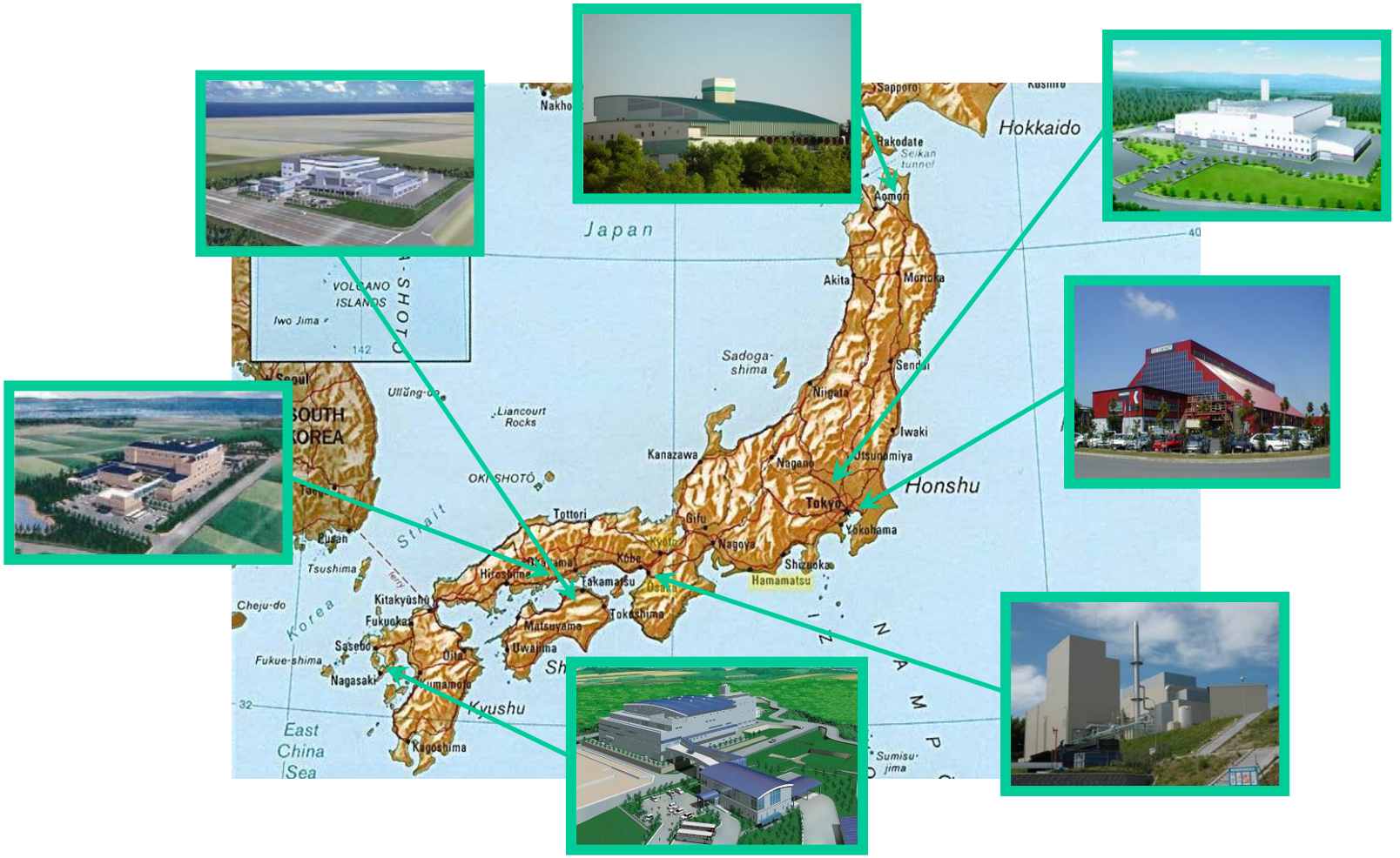
Zinc, Lead, Copper Recovery

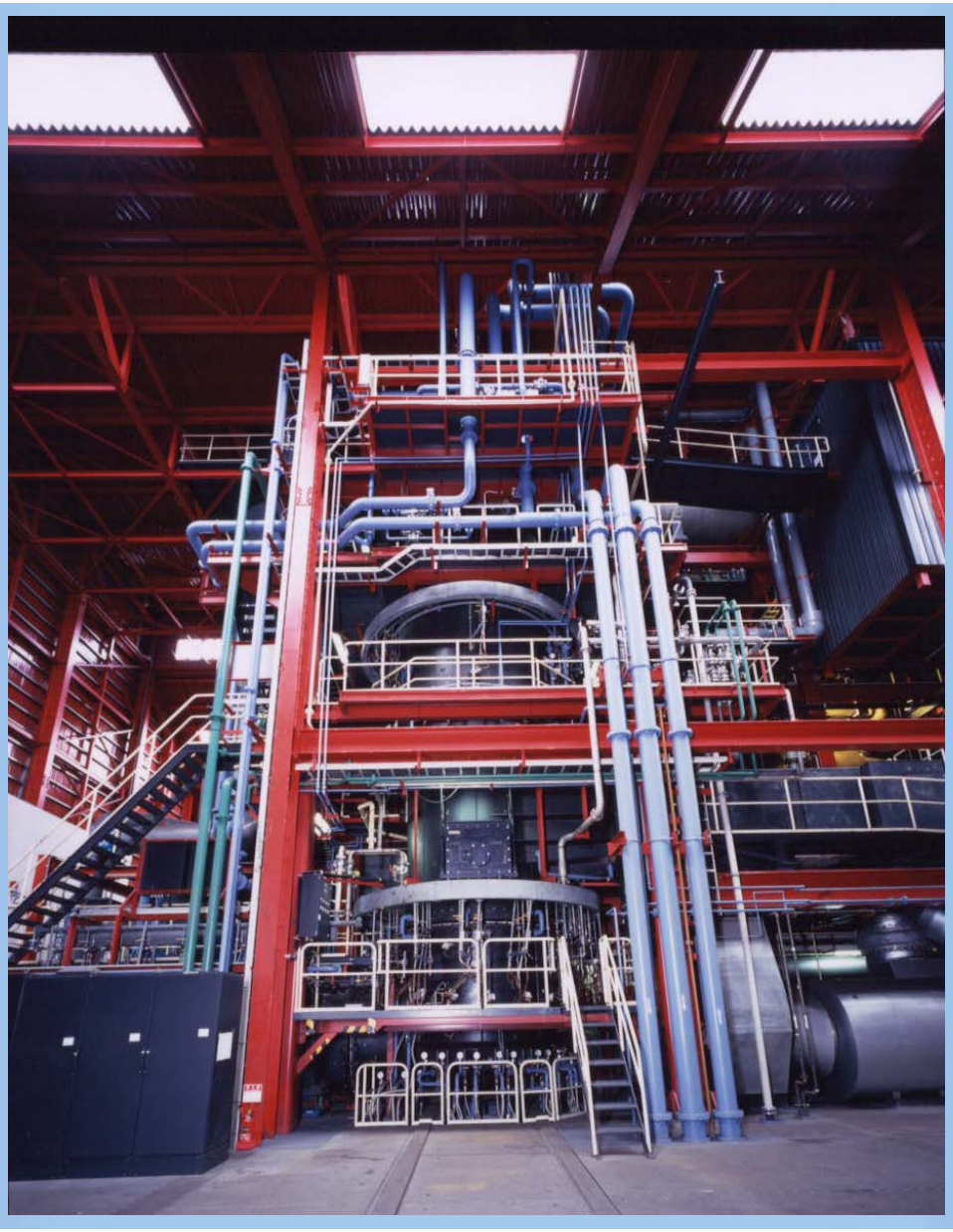
PRODUCES 100% RECYCLED MATERIAL
100% Diversion Rate From Landfills

Input	Pounds		Products	Pounds
Waste	2,000		Synthesis Gas	1,800
Oxygen	1,000		Water	750
Consumables	130		Aggregate	470
NaOH			Metal Pellets	65
HCL			Sulfur	20
Ion Exchange Resin			Salt	15
Hydrogen Peroxide			Zinc Concentrate	10
Iron Chelate				
Total	3,130		Total	3,130

THERMOSELECT FONDOTOCE, ITALY DEMONSTRATION FACILITY – 110 TPD

Projects in Japan





LANZATECH
ETHANOL TECHNOLOGY

- Patented technology to convert syngas (H2 + CO) into ethanol (C2H4OH)
  - Over 250 Patents pending; 85 granted 2 proprietary microbe families
- LanzaTech's process:
  - Biological conversion of carbon to ethanol through gas fermentation
  - Uses microbes that grow on gases rather than sugars, as in traditional fermentation
  - Waste gases and residues are transformed into useful commodities and sold
- Proven, commercial technology used worldwide
  - 5 plants operating since 2008
  - July 13, 2015, ArcelorMittal, LanzaTech and Primetals Technologies announce partnership to construct breakthrough €87m biofuel production facility
- See video: *https://www.youtube.com/watch?v=k3WLwKrEu7c*

LA COUNTY PROJECT DESCRIPTION

- The waste processing equipment will be in an enclosed building operated so that no odors leave the building – There will be no long term storage of waste
- There will be no discernable noise at the property boundary
- Will process an average of 1700 tons per day of MSW
- Will produce about 40 million gallons per year of US EPA Clean Air Act mandated ethanol
- The project will generate US EPA mandated RINs and significant LCFS credits
- Scheduled to start up fourth quarter of 2019

ENVIRONMENTAL BENEFITS OF THE PROJECT

- Uses non-incineration waste processing technology
- Diverts from landfills 100% of the waste and produces five commercially useful products that are sold
- No ash is generated – No ash landfill is required
- No process water discharges
- Waste processing equipment produces no air emissions
- No crude oil refining processes are used
- The project will reduce greenhouse gas emissions
- Produces needed ethanol, RINs and LCFS credits
- Will reduce emissions from diesel trucks hauling waste to remote locations since the closure of landfills in LA County

ECONOMIC BENEFITS

- Private development of a multi-million dollar projects
- Will invest hundreds of millions of dollars locally during construction
- Will create significant construction and equipment fabrication man hours of work
- Will invest millions of dollars locally during the 30 year operation and maintenance period
- Will create well paying operation & maintenance jobs for 30 years
- Produces significant quantities of RINs and LCFS credits per year
- Will reduce the cost of waste disposal
- Will provide reliable waste disposal capacity for at least 30 years
- The City of Carson will receive an annual Host Community Fee

Contact Information

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